DTT
APPS WEB GAMES

Legend

Advised by DTT

Items with an asterisk**(*)** are explained on the glossary tab

Functionalities	Web

WEB

#0.0 Splash

As a user, I need to be able to see the splash screen so that I know the app is loading to open.	2
I must see the splash screen image for a few seconds when the app is launching.	-

#1.0 Tutorial

As a user, I want to be introduced to the three function roles so I am aware of the differences.	2
I want to see an overview of the three function roles during the interactive tutorial	-
I want to be able to continue to the next step of the interactive tutorial	-
As a user, I want to be shown the area of the Dutch air space so that I am aware of the area.	3
I want the Dutch air space to be highlighted	-
I want to be able to continue to the next step of the interactive tutorial	-
As a user, I want to be shown the position and function of a radar so I can see incoming action.	3
I want the radar to be highlighted within the Dutch air space	-
I want the text to explain the function and purpose of the radar, including a mention of the relevant function role	-
I want to see airplanes show up on the airspace within the bounds of the radar	-
I want to be able to continue to the next step of the interactive tutorial	-
As a user, I want to be introduced to the different types of airplane so I can anticipate how to interact with them	3
I want each type of airplane to be highlighted individually, one after the other	-
I want to be shown the safe airplane type highlighted on the radar and be able to continue to the next one	-
I want to be shown the unsafe airplane type highlighted on the radar be able to continue to the next one	-
I want to be shown the unidentified type highlighted on the radar and be able to continue	-
As a user, I want to be shown the position and function of an airbase	3
I want the airbase to be highlighted within the Dutch air space	-
I want the text to explain the function and purpose of the airbase, including a mention of the relevant function role	-
I want to be able to continue to the next step	-

#2.0 Gameplay

As a user, I want to see the airspace of the Netherlands and neighbouring countries	34
I want to see airplanes fly within the reach of my two radars	-
I want to see the status of airplanes within the reach of my two radars	-
Green = safe	-
White = unidentified	-
Red = hostile	-
I want to see airplanes fly outside the reach of my two radars (greyed out)	-
I want the air traffic to be simulated	-
I want air traffic to be optimised for performance	-
As a user, I want to see air traffic with varied data within the range of my radars so the interaction with the airplanes will be more diverse.	21
I want data for the airplane to be selected from a dataset that contains information about 20 different airplanes	-
I want to see/interact with the following datapoints:	-
Flight ID	-
Position	-
Altitude	-
Heading	-
Origin	-
Destination	-
Transponder code	-
As a user, I want to be able to navigate within the available airspace.	13
I want to be able to zoom in	-
I want to be able to zoom out	-
I want to be able to move around	-
I want to be restricted to the Dutch airspace in my navigation	-
I want to be able to see my cursor on the map	-
As a user, I want to be able to select an airplane so I can contact the pilot to verify the validity of available airplane information	21
I should see all the available information about the selected aircraft:	-
Flight ID	-
Position	-
Altitude	-

Heading	-
Origin	-
Destination	-
Transponder code	-
I should be able to request any missing information about a selected airplane	-
I should be able to confirm all available information about the selected airplane	-
When I want to repeat a question to the pilot, I want to be shown the ‘repeat question' option	-
As a user, I want to see the flight path of a selected airplane when the airplane is identified	21
I want to be able to see the flight path on the map when an airplane is selected and the airplane is identified	-
I want to be able to see which part of the flight path has already been flown, and where the plane is going next according to the flight path	-
I want the flight path of the airplane to be generated, taking its origin and destination into account in broad strokes (North/East/South/West)	-
As a user, I want to be alerted when an unidentified airplane enters the Dutch airspace if I don’t respond within a timely matter.	13
When an unidentified airplane enters the Dutch airspace, and I do not interact with it in a timely matter, I should be alerted of its position with a highlight	-
As a user, I want to be able to mark an unidentified airplane as safe	5
The selected airplane should be marked green on the map	-
I should be able to make this decision at any point during the interaction process	-
As a user, I want to be able to mark an unidentified airplane as hostile	5
The selected airplane should be marked red on the map	-
I should be able to make this decision at any point during the interaction process	-
As a user, I want to be able to select the airbase so I can manage my missions	8
I want to see the airbase highlighted when it is selected	-
I want more information about the airbase to be displayed	-
I want to be able to set out a new mission	-
If I have no current missions, I want to see a message that shows me there are no current missions	-
As a user, I want to be able to select a location on the map so I can indicate where the QRA team should navigate towards during a mission	13
I want to be able to see my cursor on the map	-
I want to see the origin of location selection (typically the airbase)	-
I want to see the current distance towards the new location in seconds of travel time (game time)	-
I want to confirm a location by selecting it	-
I want to see the GPS coordinates of the selected location\	-
As a user, I want to be able to scramble my QRA team so the team will be prepared to go on their mission.	8
I have to wait for 15 seconds until the QRA team is ready to scramble.	-
I should see a time indication to let me know how much time is remaining.	-
While the QRA team is ready to start their path to the interception point, I should still be able to change the mission goal or location.	-
As a user, I want to be able to set out a new mission so I can command my QRA team.	13
I want to be able to provide the relevant goals and targets for this new mission:	-
I want to set a goal of the mission, choosing from:	-
Identify,	-
Escort,	-
Intervene,	-
Engage.	-
If I select ‘engage', I want to be asked for confirmation before proceeding	-
I want to select a location of the mission	-
While I’m selecting my mission parameters, I should see how the neutral/hostile aircraft keeps moving.	-
I want to signal the QRA team to prepare for the mission (Scramble)	-
I want to see the status of the QRA team as they scramble	-
I should only be able to choose one goal. When I go back to the goal overview and start another goal, the previous one will be automatically cancelled	-
When I try to engage an airplane I should receive a warning to confirm my action	-
As a user, I want to be up to date on the status of the mission so that I can keep track of the progression of the mission.	8
I should be able to see the QRA team execute the mission goal on the map	-
If the location I have chosen for this mission is not corresponding with the location of the chosen airplane, the QRA will catch up automatically	-
I should be able to see the current status when I click on the airbase	-
I should be able to cancel the mission and start a new one	-
I should be able to conclude the mission when the mission status has succeeded	-
When I have chosen the ‘identify’ goal, I should get a report message from the QRA team with information about the airplane	-
As a user, I should be able to see the current functional role during the game so that I know which part of the game is connected to the three job functions	5
When I click on the job functions I see an overview of the job aspects.	-

I should be able to access the corresponding website	-

As a user, I should be able to complete the game so that I can evaluate my performance.	8
I should be able to see my score	-
I should see a scale with my progress in steps of 1000 points and where I stand right now	-
I should be able to replay the game	-
I should be able to challenge a friend via Facebook	-
I should be able to challenge a friend via Twitter	-
I should be able to challenge a friend via LinkedIn	-
I should be able to access the website through the link or the QR code	-

#3.0. Results

As a user, I should be able to see my score so that I can be aware of my game performance	13
I should be able to see my score	-
I should see a scale with my progress in steps of 1000 points and where I stand right now	-
I should be able to replay the game	-
I should be able to challenge a friend via Facebook	-
I should be able to challenge a friend via Twitter	-
I should be able to challenge a friend via LinkedIn	-
I should be able to access the website through the link or the QR code	-

As a user, I should to be able to challenge a friend via social media so that I can make people aware of the game	8
When I select Facebook, I should see a browser popup with a preview of the Facebook post where I can choose to post it in my news feed or my story	-
When I select Twitter, I should see a Twitter browser popup with a pre-filled text message and input fields to enter my credentials to log in	-
When I select LinkedIn, I should see a browser popup with a preview of the LinkedIn post where I can choose to share it in a post or send it as a private message	-

Enrichments	
Messages for the benefit of user-friendliness	2
Caching logic to limit network data usage and improve the user experience*	2

Data driven development*	
Firebase Analytics - page tracking	1
Firebase Analytics - KPI research	8

Fundamentals	
WEB development and staging environment setup	3
WEB development and staging environment security and control	3
Database setup/composition	3
Crashlytics for the purpose of detecting bugs	1
Crash information pop-up mechanism	1
Technical documentation	3

Test driven development*	
Implementation of unit tests for the core functionality of the mobile application(s)	8

Total hours development for each platform	**268**

Total development	**268**
Web development	268

Design	**7**
Updating workflow/UI/UX documentation	2
Design documentation for development	3
Writing or updating the user stories	2
Project management*	42
Quality assurance*	42

Total hours	359
Total price	€45 593,00

Hourly rate	€127,00

All prices are excluding VAT. Our hourly rate is €127,- but might differ dependent on the complexity, volume and urgency of the project. This estimation is valid for a period of 14 days.

The estimated hours are charged at the communicated rate, the indicated price concerns the minimal to be invoiced fee for the works as described in this offer document. Any surplus of hours after a succesful completion of the described works will not be reimbursed or reserved as a credit. Realising a high-quality solution often requires multiple rounds of optimisation. When the hours for realising the described and estimated works exceed the initial estimate, additionally required hours will be offered at a reduced rate of €87,- per hour. By offering this reduced rate when the estimated hours are exceeded, DTT strives to compromise between the interests of our Clients and the interests of the Contractor. When additional hours are required, DTT will proactively communicate the status of spent and required hours. The described additionally required hours will be invoiced at the start of each month. Additional wishes and functionalities which have not been specified or estimated, fall outside of the scope of this estimate. In the estimation the same functionality can be mentioned multiple times. The first time a functionality is mentioned in the estimation it will be estimated higher, a functionality will receive discounted hours when mentioned again.

The required hours for realisation can deviate from the provided estimation when the completion is depended upon a third-party, this includes when DTT; i. works with a third-party API, ii. works with an unfamiliar hosting environment, iii. has to rely on third-party hardware or software.

Glossary

Agile ceremonies

Agile ceremonies are meetings that allow us to plan, analyse and track the development status and progress. Our ceremonies include a sprint planning, a sprint review, a retrospective, and daily stand-ups with the entire team.

Project management

It is the responsibility of the project manager (or, 'PM') to ensure that all team members work together in an effective and efficient manner. The PM's daily tasks include setting priorities for the team, performing resource allocation, initiating agile ceremonies, communicating with the client, and ensuring everyone is working towards the same goal with the same information and priorities.

Quality assurance

DTT has a dedicated team for Quality Assurance (or, 'QA'). It is the responsibility of this team to continuously test the deliveries of our development teams. Our QA engineers employ unit tests, integration tests and automated user testing to assist them in assuring the quality of our solutions. Additionally, they also ensure the solution adheres to guidelines and best practices. Before a solution is delivered to our clients, it must first be approved by our QA engineers.

Bug fixing and revising

Bugs are issues in software that cause incorrect or unexpected behaviour. These issues can be introduced during software development, but can also occur due to changes in third-party dependencies or other external influences. When a bug is fixed, we redesign the functionality to prevent it from happening again - this is called 'revising'. Fixing bugs and revising the codebase are an integral part of software development.

CMS (Content Management System)

CMS stands for 'Content Management System'. The CMS is an (often web based) environment which provides an administrator with tools to manage content in a solution.

API

API stands for 'Application Programming Interface'. An API connects the mobile and/or web application with the back-end solution, often to facilitate communication with the database.

Caching logic

Caching is a technique where data is stored after it is retrieved for the first time. This allows for a faster retrieval of this data every next time it is required, which significantly reduces load times and improves the overall user experience.

Image optimiser

This tool optimises the resolution of (downloaded/uploaded) images to ensure a higher image quality at a lower file size. This results in better looking images, faster loading times, and reduced upload/download bandwidth. DTT implements this tool by default in all her projects.

Technical documentation

Technical documentation refers to any form of documentation that describes the use, functionality, or architecture of a solution. It helps to increase the maintainability, resource scalability and technical communication of all members involved. DTT designs extensive technical documentation for her solutions, including functional design, user stories, code architecture, class diagrams, flowcharts, and API documentation.

Test Driven Development

Test Driven Development (or, 'TDD') is a development methodology that puts an emphasis on the automated testing of code. Often, the test is even written before the code. The test is then used as a 'check' to verify that the code is both complete and functional. If something 'breaks' in this code, the developer will be notified by the failing test and prevent unneeded test cycles by the QA team and the client. TDD results in highly tested and stable code, which improves the quality of the codebase and the stability of the solution.

Auto review mechanism

This UI/UX mechanism is designed to receive feedback from users in an effective and non-intrusive manner. Users are asked if they are happy about the solution. Based on their answer, the users are kindly requested to provide additional feedback via email, or as a rating/review in the app store.

Data Driven Development (analytics)

User feedback and analytics provide insight into how a solution is used by its users. When we shape new features and optimisations based on these insights, we speak of 'data driven development'. Measuring user behaviour is essential for focussing the development phases of a solution after its publication, as it allows us to make informed decisions on improvements, priorities, and optimisations. To measure user behaviour, we advise the implementation of Google Analytics for Firebase, which additionally tracks a wide variety of standard KPI's and user information, including demographics, countries of origin, session duration, growth and retention.

Funnels

A funnel is a measurement technique that tracks user behaviour according to a predetermined process (or, customer journey). Google Analytics for Firebase allows you to track: i). how often a process is started, ii). how often a process has been completed, and iii). at which point a process has been stopped. To illustrate the insights provided by a funnel, let's imagine a funnel for a web shop which tracks: i). when a product has been selected, ii). when the selected product has been added to the shopping cart, iii). when the user proceeds to the payment step, and, finally, iv). when the user has confirmed their purchase. In this example, knowing the amount of users that reach each step of the purchasing process, and knowing the percentage of users that proceed to the next step, provides us with valuable insight into where users drop off during this customer journey. These insights can be used to prioritise which parts of the purchasing process need to be optimised first.